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Statistical Information on Cost of Cargo and Passenger Shipments in USSR River Transport

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STATISTICAL INFORMATION ON COST OF CARGO AND PASSENGER SHIPMENTS IN USSR RIVER TRANSPORT

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Preliminary Remarks:

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1. The cost of shipment in river transport (for basins, steamship lines and regional administrations) in the USSR was planned as an average for all forms of operation until 1951 inclusively. Cost of shipments was not planned for separate forms of operation (method of shipment, type of cargoes) up to 1951 inclusively. [redacted] such a situation has not changed up to the present time (there is corroboration for this in the Vodnyy Transport newspapers for 1953). Individual directors of the ministry planning organs sometimes expressed their opinions on the advisability of changing the system of cost planning; namely, to abandon the establishment of average planned cost per ton-kilometer output, and to develop and confirm cost by forms of operation (method of shipment, type of cargoes). However, this matter did not proceed farther than opinions. The actual cost of shipments for separate forms of operation may be determined, and was determined when necessary, both in the periphery and in the central organs of the ministry.

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2. Labor productivity in shipments in river transport is measured by the number of ton-kilometers of net output per worker during a unit of time.

3. Output expressed in net ton-kilometers is the sum of ton-kilometers and passenger-kilometers. Such output often is called "passenger-ton-kilometers."

4. Expenses to operate ships which are included in the cost of output in river transport, are distributed by elements in approximately the following manner: (a) crew wages, basic and additional, charging the cost of feeding also to wages, 20 percent; (b) fuel, lubricants and wiper materials, 30 percent; (c) current, intermediate and inter-trip repairs, 22 percent; (d) ship supply, 5 percent; (e) amortization, 8 percent; (f) navigation expenses, 5 percent; (g) administrative-managerial and general expenses, training of personnel, 10 percent.

Answers to Questions:

Remark: the following abbreviated designations generally established in the USSR are used in all the tables I present below.

MRF	Ministry of River Fleet
URTSR	Administrations of River Transport of Union Republics
GUSMP	Main Administration of the Northern Sea Route
mln. t	millions of tons
mlrd. t-km	billions of ton-kilometers
mln. r.	millions of rubles
mlrd. r.	billions of rubles
kop.	kopecks
chas.	hours
km	kilometers
t	tons
mlrd. pass-km	billions of passenger-kilometers
p-t-km	passenger-ton-kilometers (net ton-kilometers)
tys. p-t-km	labor productivity in shipments in 1,000s of net ton-kilometers

A. AVERAGE COST PER NET TON-KILOMETER, PER TON-KILOMETER AND PER PASSENGER-KILOMETER

1. Average cost per net ton-kilometer in the Ministry of River Fleet, Administrations of River Transport of Union Republics and in river transport of the Main Administration of the Northern Sea Route [table follows on next page]

1/ Expenses to operate the fleet included in the cost of transport output were adopted [redacted] approximately starting with 1952, but with a maximum degree of accuracy. Initial data were some information for 1951 known [redacted] earlier, and also several reports published in the Soviet press about work of river transport. This also enabled [redacted] more precise computations made earlier on the financial activity of river transport. 25X1 25X1 25X1

Designation of Elements	Units	Y E A R S 1951	1952	1953	1954	1955	1956
Total Shipments	mln. t	103.0	108.9	115.9	128.6	139.1	152.8
Including							
a. MRF	"	96.5	102.0	108.5	120.3	129.3	152.8
b. URTSR	"	6.2	6.6	7.1	7.9	9.8	- -
c. GUSMP	"	0.3	0.3	0.3	0.4	- -	- -
Cargo Turnover	mlrd. t-km	51.9	58.2	59.35	62.8	67.4	73.5
Including							
a. MRF	"	51.1	57.3	58.4	61.7	66.6	73.5
b. URTSR	"	0.5	0.55	0.6	0.7	0.8	- -
c. GUSMP	"	0.29	0.3	0.34	0.4	- -	- -
Passenger Turnover	mlrd. pass-km	2.9	3.1	3.3	3.5	3.6	3.8
Overall Cargo Turnover	mlrd. p-t-km	54.8	61.3	62.7	66.3	71.0	77.3
Labor Productivity in shipments	tys. p-t-km	400	410	420	440	480	540
Expenses Included in Cost of Transport Output							
1/All forms of wages	mlrd. r.	1.16	1.23	1.24	1.24	1.23	1.24
2/Fuel, lubricants & wiper material	"	1.73	1.83	1.86	1.86	1.83	1.86
3/Repair	"	1.26	1.34	1.36	1.36	1.34	1.36
4/Supply	"	0.28	0.3	0.31	0.31	0.3	0.31
5/Amortization	"	0.46	0.49	0.5	0.5	0.49	0.5
6/Navigation	"	0.28	0.3	0.31	0.31	0.3	0.31
7/Administration	"	0.58	0.61	0.62	0.62	0.61	0.62
Total Expenses	"	5.75	6.1	6.2	6.2	6.1	6.2
Cost of Transport Output							
Overall Cost	kop.	10.5	9.9	9.9	9.35	8.6	8.04
Including:							
a. MRF	"	10.1	9.64	9.5	9.0	8.35	8.04
b. URTSR	"	30.0	30.0	30.0	30.0	30.0	- -
c. GUSMP	"	40.0	38.0	36.0	35.0	- -	- -

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2/ Cost of shipments by the Main Administration of the Northern Sea Route for 1951 were known [redacted] at that time. [redacted] approximate data on cost starting with 1952, based on the consideration that the cost of river shipments by the Main Administration of the Northern Sea Route will be somewhat reduced in successive years. 25X1

3/ [redacted] approximate data on cost of shipments by administrations of river transport of the union republics. [redacted] the constantly unsatisfactory work and the extremely high cost of shipments by administrations of river transport of the union republics. 25X1 25X1

4/ [redacted] information for administrations of river transport only up to 1955 inclusive. The Administrations of River Transport of the Union Republics are part of the structure of the Ministry of River Fleet RSFSR starting in 1956. 25X1

5/ [redacted] the table data for the Main Administration of the Northern Sea Route starting with 1955 by virture of the following. In 1954, the consolidated Ministry of Maritime and River Fleet was once again divided into two independent ministries: maritime fleet and river fleet. The Main Administration of the Northern Sea Route was left in the structure of the Ministry of Maritime Fleet. 25X1

2. Average Cost per Passenger-Kilometer

[redacted] it necessary to state the following in regard to the cost of passenger shipments. In 1950 [redacted] the approximate cost of passenger shipments for the former Volga Cargo-Passenger River Steamship Line and it was about 25-30 kopecks per passenger-kilometer. The cost of passenger shipments is considerably higher than the cost of cargo shipments, because the expenses to maintain the passenger fleet increase sharply in passenger shipments. 25X1 25X1

[redacted] give only an approximate computation of the cost per passenger-kilometer in this document. This computation is based upon the following principle. In 1951, there were 53.6 million passengers hauled and 2.9 billion 25X1

passenger-kilometers were made, with an average shipment distance per passenger of 54 kilometers. The average passenger capacity per passenger ship is normally 250 persons. The navigation operating period of a passenger ship is an average of 200 days or 4,800 hours (considering the winter inter-navigation period and inter-trip withdrawals from service by the ship during the navigation period). The average trip turnover [time] for a passenger ship with an average length of haul for passengers of 54 kilometers will be approximately 24 hours (considering running time, cargo operations, preventive maintenance, observance of the timetable, and other standing time). Therefore, one passenger ship during the navigation period under the given conditions can haul 100,000 passengers. An average of 536 passenger ships is therefore needed to haul 53.6 million passengers. The crew of a river passenger ship averages 26 persons and its [the crew's] upkeep expenses amount to about 200,000 rubles per year. Expenses to maintain crews of all passenger ships amount to about 110 million rubles a year. Therefore, basic operating expenses directly related to maintaining the passenger fleet and included in the cost of passenger shipments will be about .55 billion [550 million] rubles a year. Thus, the average cost of river passenger shipments in 1951 was approximately [redacted] 20 kopecks per passenger-kilometer.

[redacted] the computation of cost of passenger shipments for the following years on the same principle also. [Table follows on next page]. 25X1 25X1

[redacted] the actual cost per passenger-kilometer will be about 20-25 percent higher than cited [redacted] in computations, because [redacted] in the estimates the ideal case of ship operation: without idle standing, accidents, over-expenditures, misappropriations, and other losses, arising as a result of careless work by ship crews and shore personnel. 25X1 25X1

TABLE OF AVERAGE COST OF PASSENGER SHIPMENTS

Designation of Elements	Units of Measure	Y 1951	E 1952	A 1953	R 1954	S 1955	1956
Total Shipments	million persons	53.6	59.0	62.5	72.0	79.8	82.4
Passenger Turnover	billion pass-km	2.9	3.1	3.3	3.5	3.6	3.8
Length of Shipments	kilometers	54.0	53.0	53.0	49.0	45.0	47.0
Required Number of Ships	units	536	590	625	700	750	780
Expenses to Maintain ship crews	million r.	110	120	127	142	152	159
Overall Operating Expenses	billion r.	0.55	0.6	0.65	0.71	0.76	0.79
Cost per passenger-kilometer	kopecks	20.0	19.5	20.0	20.4	21.0	21.0

Summary Table of Average Cost per passenger-ton-kilometer, per passenger-kilometer and ton-kilometer for USSR river transport

	Y 1951	E 1952	A 1953	R 1954	S 1955	1956
1/Cost per passenger-ton-kilometer	10.1	9.64	9.5	9.0	8.35	8.04
2/Cost per passenger-kilometer	20.0	19.5	20.0	20.4	21.0	21.0
3/Cost per ton-kilometer	9.6	9.1	9.0	8.2	7.65	7.35

B. PASSENGER AND CARGO TARIFFS IN RIVER TRANSPORT

Incomes of river transport organizations in the USSR are determined on the basis of tariffs for shipment of cargoes and passengers. Tariffs for cargo shipment are computed according to 1. type of cargo, 2. method of shipment, 3. operating region and 4. operating conditions. The same situation exists in regard to tariffs for passenger shipments. Cargo shipment tariffs were increased on 1 January 1949 by government decree.

[redacted] 25X1

[redacted] If even part of these could be obtained, 25X1

then prices and incomes can be determined with a sufficient degree of

accuracy, since in my preceding documents [redacted] the volume of 25X1
shipments by basins and by type of cargoes.

[redacted] the name of one of the tariff handbooks for USSR river 25X1
transport: "Tariff Handbook TR-No 1R for River Transport" (Tarifnoye Rukovodstvo TR-No 1R dlya Rechnogo Transporta). This tariff handbook is referred to in the Vodnyy Transport newspaper No 76 for 26 September 1953.

Initial data for establishing the income rates of separate central administrations and steamship lines are the state plan for shipment of cargoes and passengers and the tariff handbooks.

C. AVERAGE COST OF SHIPMENTS PER TON-KILOMETER OF WOOD IN RAFTS AND IN SHIPS

1. Computation of the cost of shipment per ton-kilometer of timber in rafts for the Volga-Kama basin.

a/Data on sizes of rafts and timber-carrier--barges (barzh-lesovoz).

1/Common rafts: volume of 2,500-4,000 cubic meters, weight 1,500-2,400 tons, length about 120 meters, beam about 14-15 meters.

2/Large-load rafts: volume 12,000-13,000 cubic meters, weight 7,200-7,800 tons, length about 300 meters.

3/Gigantic rafts: volume about 50,000 cubic meters, weight 30,000 tons, length about 500 meters, beam about 115 meters.

4/Gigantic rafts[sic]: volume about 100,000 cubic meters, weight 60,000 tons, length about 500 meters, beam about 200 meters.

Large-load and gigantic rafts are towed primarily on the Volga, Kama and Severnaya Dvina [Rivers].

Normal cargo deadweight of timber-carrier--barges is 2,000-2,500 tons.

The weight of 1,000 cubic meters of raft is 600 tons.

[On next page is a] Table of Average Cost of Shipment per ton-kilometer of wood in rafts in the Volga-Kama basin system.

Designation of Elements	Units of Measure	Y E A R S 1951	1952	1953	1954	1955	1956
Total Shipments	mln. t	21.0	23.0	24.0	26.0	28.0	30.0
Cargo Turnover	mlrd. t-km	6.6	7.5	7.6	7.8	8.2	8.7
Average Shipment Distance	kilometers	312	326	316	300	293	290
Average Cargo-dead-weight of tug and raft	tons	6,000	6,000	6,000	6,000	6,000	8,000
Average Duration of Trip Turnover	hours	200	210	205	190	195	190
Operating Period of the tug	hours	4,800	4,800	4,800	4,800	4,800	4,800
Required Number of ships	units	145	170	170	170	190	150
Expenses on Ship Crew Upkeep	mln. rub.	26.0	30.0	30.0	30.0	34.0	28.0
Overall Operating Expenses	mln. rub.	130.0	150.0	150.0	150.0	170.0	137.0
Cost	kopecks	2.0	2.0	1.97	1.92	2.08	1.6

Table of Computation of Average Cost of Shipment per ton-kilometer of timber in ships in the Volga-Kama basin system

Designation of Elements	Units of Measure	Y E A R S 1951	1952	1953	1954	1955	1956
Total Shipments	mln. t.	5.0	5.2	6.0	6.5	7.0	7.4
Cargo Turnover	mlrd. t-km	2.5	2.8	2.9	3.3	3.5	3.7
Average Shipment Distance	kilometers	500	540	485	510	500	500
Average Cargo-dead-weight of ships	tons	2,000	2,000	2,000	2,000	2,000	2,000
Average Duration of Trip Turnover	hours	200	220	190	205	200	200
Operating Period of Ships	hours	4,800	4,800	4,800	4,800	4,800	4,800
Required Number of Ships	units	105	120	120	140	145	154
Expenses on Ship Crew Upkeep	mln. rub.	22.0	25.0	25.0	29.5	30.6	32.8
Overall Operating Expenses	mln. rub.	110.0	126.0	126.0	148.0	153.0	161.0
Cost of Shipments	kopecks	4.4	4.5	4.35	4.4	4.35	4.35

E. [Sic] AVERAGE COST OF SHIPMENT PER TON-KILOMETER OF PETROLEUM PRODUCTS

Table of computation of the average cost of shipment per ton-kilometer in the Volgotanker Steamship Line system.

Designation of Elements	Units of Measure	Y 1951	E 1952	A 1953	R 1954	S 1955	1956
Total Shipments	mln. t.	9.5	9.2	10.8	12.0	13.7	14.8
Cargo Turnover	mlrd. t-km	12.8	12.7	13.2	14.0	15.5	16.7
Average Shipment Distance	kilometers	1,350	1,380	1,350	1,170	1,130	1,130
Average Cargo Dead-weight of ships	tons	5,000	5,000	5,000	5,000	5,000	5,000
Average Duration of Trip Turnover	hours	960	970	960	820	810	810
Operating Period of Ships	hours	4,800	4,800	4,800	4,800	4,800	4,800
Required Number of Ships	units	380	375	430	410	460	500
Expenses on Ship Crew Upkeep	mln. rub.	140	138	159	151	171	184
Overall Operating Expenses	mln. rub.	700	690	795	755	855	920
Cost of Shipments	kopecks	5.5	5.45	6.0	6.3	5.5	5.5

The increase in cost of shipment of petroleum products is explained to a considerable degree by the fact that expenses for crew upkeep on petroleum ships are considerably higher than crew upkeep expenses on dry cargo ships. In addition, administration expenses are higher on petroleum shipments than in dry cargo shipments. Crews of petroleum ships are paid 20 percent higher than crews of dry cargo ships. In addition, bonuses and other additional payments are paid in considerably larger amounts to crews of petroleum ships.

F. REGIONS FOR WHICH THE AMOUNT OF SHIPMENT COST HAS BEEN DETERMINED

1/ The amount of cost per net ton-kilometer, per ton-kilometer and per passenger-kilometer determined in Part "A" are applicable to shipments for all USSR river transport.

2/ The amount of cost for shipment of timber in rafts [redacted] in Part "C" is for the Volga-Kama basin. 25X1

3/ The amount of cost for shipment of timber in ships [redacted] in Part "C" is for the Volga-Kama basin. 25X1

4/ The amount of cost of shipment for petroleum products [redacted] in Part "E" is for the Volga Bulk Petroleum Steamship Line "Volgotanker." 25X1 25X1

G. CHANGE OF COST BY BASINS AND STEAMSHIP LINES

1/ The cost of shipment for the same cargoes and passengers, with all other conditions equal, will not be identical for all central administrations of the basins. Every river basin has its own, special work conditions, affecting the amount of cost for shipments, e.g.: technical condition of the fleet, sailing conditions, personnel components, etc. In particular, the cost for shipment of timber in the Northern and Far Eastern basins is higher than the cost of timber shipment in the Volga-Kama basin.

2/ The cost of shipments for the same cargoes will not be identical for other steamship lines of the same basin (central administration of the basin). For example, grain shipment cost in the Kama Steamship Line will be higher than grain shipment cost in the Volga Consolidated Steamship Line, although both these steamship lines belong to the same Main Administration of the Fleet of the Central Basins, "Glavtsentroflot" [the former administration which was abolished in 1954 with reorganization of the water transport ministries [— Trans].

3/ River steamship lines of the USSR may be roughly ranked in the following manner, in order of increasing cost of shipments: 1. Moscow-Volga Canal Steamship Line; 2. Volga-Don Steamship Line; 3. Volga Consolidated Steamship Line; 4. Kama Steamship Line; 5. Dnepr Steamship Line; 6. Northwestern Steamship Line; 7. Moscow-Oka Steamship Line; 8. Northern

Steamship Line; 9. Upper-Dnepr Steamship Line; 10. Belaya Steamship Line; 11. Volgotanker Steamship Line; 12. Vyatka Steamship Line; 13. Sukhona Steamship Line; 14. White Sea-Lake Onega Steamship Line; 15. Sheksna Steamship Line; 16. Pechora Steamship Line; 17. Central-Asian Steamship Line; and 18. the steamship lines of Siberia and the Far East.

SOME DATA FROM SOVIET SOURCES, DESCRIBING THE FINANCIAL OPERATIONS OF ORGANIZATIONS OF RIVER TRANSPORT USSR

1/ The Main Administration of the Petroleum Fleet in the first half of 1953 exceeded the cost of shipment set up by plan by 7.8 percent (Vodnyy Transport No 84 of 15 October 1953).

2/ Volgotanker Steamship Line permitted losses in 1952 totaling 5,800,000 rubles, and 6,500,000 rubles in 1953 (Vodnyy Transport No 84 for 15 October 1953).

3/ Expenses for fuel, lubricants and wiper materials in the USSR river transport system amount to nearly one third of all expenses (Vodnyy Transport No 84 of 15 October 1953).

4/ The Volga Cargo Steamship Line in 1953 should reduce the cost of shipments by one percent and deliver 2,084,000 rubles above-plan accumulation. For the first half of 1952 this steamship line obtained unplanned losses totaling 3,085,000 rubles, and more than 5 million rubles unplanned losses for the first half of 1953 (Vodnyy Transport No 76 of 26 September 1953 and No 68 of 8 September 1953).

5/ In the first half of 1953, the cost of river shipments in the USSR increased 2.6 percent above plan (Vodnyy Transport No 76 of 26 September 1953 and No 69 of 10 September 1953).

6/ Volgotanker Steamship Line in 1953 operated unsatisfactorily in regard to the reduction of cost of shipments (Vodnyy Transport No 69 of 10 September 1953).

7/ Many river steamship lines permitted amounts of expenses in 1953 which did not correspond to the volume of shipments completed. The volume of expenses exceeded the corresponding volume of shipments (Vodnyy Transport No 69 of 10 September 1953).

8/ In the Main Administration of the Fleet of the Central Basins--"Glavtsentroflot"--the planned cost per 1,000 passenger-ton-kilometers for the second quarter of 1953 was nearly 80 kopecks higher than the income rate for this work. Hence, the overall losses for all planned transport output amounted to about 10 million rubles. If the income plan for the fleet was over-fulfilled 3.5 percent or the cost of cargo shipments was reduced correspondingly, then the Main Administration would not have losses. In this instance the Main Administration acquired an above-plan loss in the amount of one ruble 32 kopecks for every 1,000 ton-kilometers (Vodnyy Transport No 68 for 8 September 1953)

9/ The cost of passenger shipments in 1953 was reduced 1.1 percent in the Main Administration of the Fleet of the Central Basins--"glavtsentroflot." The cost of dry cargo shipments behind tugs was 6.2 percent above the planned cost in this main administration in 1953. (Vodnyy Transport No 68 of 8 September 1953).

10/ Unproductive wastes and losses in the Kama Steamship Line for the first half of 1953 were about 1.5 million rubles (Vodnyy Transport No 68 of 8 September 1953).

BASIS OF DATA

The following were used in computing data on cost of shipments in USSR river transport:

1/ [redacted] the work of individual steamship lines and main administrations. 25X1

2/ [redacted] unpublished document "Five-Year Plan for Restoration and Expansion of the National Economy USSR for 1946-1950." 25X1

3/ Large Soviet Encyclopedia, second edition, USSR volume.

4/ [redacted] past work with the prospects for expansion of USSR river transport. 25X1

5/ The statistical compilation "National Economy of the USSR," 1956 edition, State Statistical Publishing House.

6/ River Transport (Rechnoy Transport) and Water Transport (Vodnyy Transport) journals.

REMARK:

On the whole, data about cost of shipments are of an approximate nature. [redacted] tried to achieve maximum accuracy in determining them. 25X1
[redacted] information on prices for shipments of separate cargoes and passengers by steamship lines and basins can be computed [redacted] a part of the tariff handbooks of USSR 25X1
river transport. [redacted] determine prices and income rates under these conditions with a sufficient degree of accuracy, since the volume of shipments by type of cargoes and for individual river basins have been established [redacted] earlier. 25X1

- END -